

IN THE CLAIMS

Please amend claim 12 as follows:

1 1. (Previously Amended) An address search apparatus in an ethernet switch, said
2 apparatus comprising:

3 a plurality of ports;

4 a plurality of local search blocks corresponding to each of said plurality of ports, each
5 of said plurality of local search blocks configured to analyze a destination address of an input
6 packet received in the port thereof and to search for a transmission port of said ethernet
7 switch and provide a source address thereof;

8 a main search unit configured to analyze said source address to establish an address
9 data structure of said plurality of local search blocks, said main search unit also configured
10 to respond to a destination address request from at least one of said plurality of local search
11 blocks by either providing said requested destination address to a corresponding local search
12 block by using said address data structure when said main search unit has said destination
13 address or by sending a “no port” signal to said at least one of said plurality of local search
14 blocks when said main search unit does not have said destination address; and

15 a scheduler for controlling said local search blocks and said main search unit to enable
16 an interface therebetween.

1 2. (Previously Amended) The address search apparatus according to claim 1, each of
2 said plurality of local search

blocks includes:

a destination address table having destination addresses and destination information corresponding to said destination addresses which are matched therein;

a source address table having source addresses and source information corresponding to said source addresses which are matched therein;

an address sorting logic configured to classify an ethernet address into groups as many as necessary, and corresponding to each of said destination address table and said source address table;

a control logic for control of corresponding local search blocks; and

a register unit for temporal storage of data.

3. (Original) The address search apparatus according to claim 1, said main search unit includes:

an address table for storing addresses known to the ethernet switch system and port information corresponding to said addresses;

a table access logic for accessing said address table;

an address sorting logic for classifying addresses having same characteristics to store data known to the ethernet switch system into said address table; and

a control unit for control and condition detection of elements.

Claim 4. (Canceled)

1 5. (Original) An address search method in an ethernet switch, said method comprising
2 the steps of:

3 determining whether or not a port has received an information packet for
4 transmission;

5 reading a destination address from a header of said information packet;

6 determining whether said destination address exists in a local search block of said
7 port;

8 determining whether said destination address is the same as a source address; and

9 transmitting said information packet to said destination address if said destination
10 address is in said local search block of said port and is not the same as said source address.

1 6. (Original) The method of claim 5, further comprising the step of rejecting said
2 information packet if said destination address is the same as said source address.

1 7. (Original) The method of claim 5, further comprising the steps of:

2 notifying a main search block if said destination address is not found in said local
3 search block of said port;

4 performing an internal search by said main search block to find said destination
5 address;

6 updating said local search block of said destination address if said main search block

7 comprises said destination address; and

8 transmitting said information packet to said destination address.

1 8. (Original) The method of claim 7, further comprising the steps of:

2 sending no-port information from said main search block to said port device if said
3 main search block does not comprise said destination address; and

4 broadcasting said information packet to all ports in said ethernet switch by said port
5 device.

1 9. (Original) The method of claim 7, further comprising the step of aging, wherein
2 said main search block purges addresses that have not recently been used.

1 10. (Original) The method of claim 8, further comprising the step of address learning,
2 wherein said main search block adds said destination address to its address table.

1 Claim 11. (Canceled)

1 12. (Currently Amended) The apparatus of claim 1, each of said plurality of local
2 search blocks being configured to broadcast said input packet to all of said plurality of ports
3 when in receipt of said “no port” signal from said main search unit.

1 13. (Previously Added) The apparatus of claim 1, said plurality of local search blocks
2 being configured to compare said destination address of said received input packet with
3 addresses stored in a table within using a hash algorithm.

1 14. (Previously Added) The apparatus of claim 1, each local search block being
2 configured to filter all received input packets that have a destination address the same as its
3 own port.

1 15. (Previously Added) The apparatus of claim 2, the address sorting logic and the
2 control logic being configured to determine whether the source address and the destination
3 address of a received input packet are the same and the address sorting logic and the control
4 logic being configured to filter a received input packet when the source address and the
5 destination address are the same.

1 16. (Previously Added) The apparatus of claim 2, said address sorting logic and said
2 control logic being configured to perform a hash algorithm for said classifying the ethernet
3 address into groups.

1 17. (Previously Added) The method of claim 5, further comprising filtering said
2 information packet when said destination address is the same as the source address.

1 18. (Previously Added) The method of claim 5, said transmitting occurring only when
2 the destination address is not the same as the source address.

1 19. (Previously Added) The method of claim 5, said broadcasting occurring only
2 when said main search block does not comprise the destination address.